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Often Distant From Policy Making, Scientists Try to Find a Public Voice



Narendra P. Tallapragada is a high-school senior from Virginia who plans to study electrical engineering at MIT. He is also interested in political science, and says scientists should have "mandatory" training in public speaking. (Photograph by Tracy Clayton)

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By Paul Basken

Like thousands of university researchers around the country, Allison K. Leidner believes that her findings in an obscure and hard-to-explain slice of the academic spectrum may hold importance to the lives of millions.

Unlike many of those researchers, however, Ms. Leidner has realized the value of explaining her findings in a way that large numbers of people can understand.

A small but growing number of colleges, helped by groups such as the American Association for the Advancement of Science, are making a determined effort to teach their scientists —a group seemingly unable to avoid cloaking its findings in an obscure vocabulary —to speak more often and more clearly to the public and to policy makers.

One such effort helped Ms. Leidner realize that public explanations of her study, "The Effect of Urbanization on an Endemic Coastal Butterfly," didn't really need the word "endemic" to help people recognize that an environment that's bad for butterflies could be bad for other living creatures, too.

"You can explain what you want without the word 'endemic,'" said Ms. Leidner, who is now pursuing her research at the University of Maryland after earning a doctorate in zoology at North Carolina State University. "So why make it more confusing?"

That's exactly the kind of recognition the science association hoped to produce with a program of one-day "Communicating Science" workshops that it began last year, said Tiffany Lohwater, the group's public-engagement manager.

Just a week after her AAAS workshop, Ms. Leidner was on Capitol Hill explaining her studies of the rare "crystal skipper" butterfly to North Carolina lawmakers as part of a lobbying day organized by the American Institute of Biological Sciences. An organizer of the Congressional visit said afterward that "she was very confident and did a great job," Ms. Lohwater said.

More than 400 other scientists and engineers have participated in the AAAS program on college campuses and at professional-society meetings, she said. Still, that is only a small fraction of the nation's research scientists, and Ms. Lohwater acknowledged that it is not clear how deeply such approaches are being integrated into other university programs or whether there has been any major shift in the ability of scientists to penetrate public-policy debates.

"I think what we're seeing is an increased interest," said Ms. Lohwater, whose group plans a membership survey on the topic this summer. "But until we have data to support that, it's hard to say."

Scientists Staying Away

Other indicators suggest the overall progress may be slow. One small sample —a tally by The Chronicle of all Congressional hearings held during one week in May that featured at least one expert witness other than a government official —found only two university researchers among the 124 people invited to address lawmakers on topics that included economic development and trade, taxation, health care, energy, military procurement, prison sentencing, and the environment.

Rather than invite university experts steeped in such topics, members of Congress instead heard from dozens of representatives of businesses, labor organizations, and advocacy groups, along with lawyers, private analysts, and fellow lawmakers and government officials.

"The scientific community is quite underrepresented at these hearings," said K.C. Das, an associate professor of engineering at the University of Georgia who testified at a House Small Business Committee hearing on regulations in the biofuels industry. The week's only other Congressional hearing with a university expert concerned student financial aid.

Such underrepresentation is typical and does "tell you something about the way decisions are being made" in government, from the local level through the federal, said Charles F. Niederriter, a professor of physics at Gustavus Adolphus College who organizes an annual conference on his Minnesota campus about presenting scientific findings to the public.

"The way decisions are being made generally excludes direct interaction with academics," Mr. Niederriter said. "And that's partly because academics are hard to work with."

A traditional inability or unwillingness of scientists to talk directly with the public and policy makers may be one big factor, but not the only one, said Stephen H. Schneider, a professor of interdisciplinary environmental studies at Stanford University.

Another hurdle is institutional: Universities and grant-making agencies, despite their talk of breaking down divisions in academe, still favor researchers with a single-themed approach, Mr. Schneider said. "So if you're going to divert a fraction of your career into outreach and into these other things, and you're not smarter than the person next to you, and there's two of you running for one tenured slot, there's risks associated with being too broad, being too interdisciplinary, for young scientists," he said.

Signs of Change

Still, recent trends show that scientists may be gaining greater influence on governmental policy, said Lawrence Badash, a retired professor of the history of science at the University of California at Santa Barbara, who has written several books on the topic.

Scientists have few lobbying groups, Mr. Badash said, and President Obama named a former leader of one of them —John P. Holdren, a past chairman of the Federation of American Scientists —as his science adviser. Mr. Obama picked another university researcher, Steven Chu, a Nobel Prize-winning

physicist, as his energy secretary. That followed a period in which the Bush administration "stifled and even perverted" the recommendations of scientists to conform with its own political preferences, Mr. Badash said.

Nobel laureates and other scientists have also been accused of playing politics when taking positions on subjects such as the Vietnam War and nuclear testing that aren't directly in their fields of expertise, Mr. Badash said.

"If it's fundamentally a political question, and the scientists have no training in political science, why should we give them more credence than we give the guy next door?" Mr. Badash said. "Yet we do because they have some public image as intelligent people."

And members of Congress, he said, despite failing to include scientists in many of their hearings and killing off their own "superb" Office of Technology Assessment in 1995, still have "many, many sources" of scientific expertise, including science offices within the various executive-branch agencies.

'Start Speaking Up'

But the need for scientists to work with policy makers may be growing as matters of public concern require greater levels of technical expertise to understand and solve, and carry greater dangers for wrong decisions.

Scientists can help explain "things that are unknown and dangerous, and unknown and not dangerous, and how to tell the difference," said Seth C. Zenz, a doctoral student in physics at the University of California at Berkeley, who writes a blog that highlights public misperceptions of science.

Apparently vindicated more than 30 years after he began warning about the threat of global warming, former Vice President Al Gore came before this year's annual conference of the AAAS with one overriding message for the world's largest association of scientists: Start speaking up.

"I'm asking you for help," Mr. Gore told conference delegates in February in Chicago. "Scientists can no longer in good conscience accept this division between the work you do and the civilization in which you live."

The lack of a clear message from scientists is sometimes taken as a lack of consensus. But in the case of climate change, a series of standing ovations showered by the scientists on Mr. Gore reflected

survey data showing a scientific consensus on climate change. A University of Illinois poll of 3,146 scientists published this year, for example, showed that 82 percent believe human activity has had a significant effect on global temperatures.

The purported controversy over climate change is one of the "false debates" that today's generation of scientists has improperly allowed to develop in the public mind, said one future scientist, Narendra P. Tallapragada, who plans to do things differently. A high-school senior from Virginia who is due to begin studying electrical engineering at the Massachusetts Institute of Technology in the fall, Mr. Tallapragada will arrive at MIT with experience on both sides of the science-politics divide: He finished in fourth place nationally this year in the Intel Science Talent Search competition while leading the Model U.N. team at Thomas Jefferson High School for Science and Technology, in Alexandria.

He chose MIT in part because of the strength of its political-science program. If tomorrow's scientists can't be as comfortable with public speaking as the television personalities Mehmet Oz or Sanjay Gupta are, he said, they should at least seek training of the type Ms. Leidner had before her visit to Capitol Hill.

For scientists these days, Mr. Tallapragada said, "it should be mandatory."